

Appendix No. 1 Technical Specification

Mud Pump Liners and Spare Parts

Exalo Drilling S.A. requirements:

1. Mud Pump Liners – Technical Specification

- a) All part numbers indicated below are according to NOV but the Buyer accepts replacements
- b) Acceptable producers: NOV, Southwest, Dezhou, Mud King, Russel, MCM, Histrong
- c) Certification requirements: API

NOTE: values of Liners indicated below are only estimates based on previous years usage, non- binding and can be changed. The Buyer reserves the right to not purchase whole volume after signing the Agreement.

Gardner Denver PZ 7

LP.	Item description	Manufacturer part number	Estimated value (units)
1.	Ceramic Liner 6 1/2"	7493081	12
2.	Ceramic Liner 6"	7493083	12
3.	Ceramic Liner 5 1/2"	7493085	12
4.	Ceramic Liner 5"	7493087	12

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Gardner Denver PZ 8 / PZ 9

LP.	Item description	Manufacturer part number	Estimated value (units)
5.	Ceramic Liner 6 1/2"	7493650	12
6.	Ceramic Liner 6"	7493600	24
7.	Ceramic Liner 5 1/2"	7493550	24
8.	Ceramic Liner 5"	7493500	12

National 9P100/10P130

LP.	Item description	Manufacturer part number	Estimated value (units)
9.	Ceramic Liner 6 1/2"	7465650	18
10.	Ceramic Liner 6"	7465600	18
11.	Ceramic Liner 5 1/2"	7465550	18
12.	Ceramic Liner 5"	7465500	12

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F-800 / F-1000

LP.	Item description	Manufacturer part number	Estimated value (units)
13.	Ceramic Liner 6 1/2"	02495650HP	18
14.	Ceramic Liner 6"	7495600	18
15.	Ceramic Liner 5 1/2"	7495550	18
16.	Ceramic Liner 5"	7495500	9

Bomco F-1600

LP.	Item description	Manufacturer part number	Estimated value (units)
17.	Ceramic Liner 6 1/2"	7499650	24
18.	Ceramic Liner 6"	7499600	24
19.	Ceramic Liner 5 1/2"	7499550	24
20.	Ceramic Liner 5"	7499500	18

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IDECO T1300

LP.	Item description	Manufacturer part number	Estimated value (units)
21.	Ceramic Liner 6 1/2"	7507650	12
22.	Ceramic Liner 6"	7507600	12
23.	Ceramic Liner 5 1/2"	7507550	12
24.	Ceramic Liner 5"	7507500	9

Bentec T1600 7500 psi

LP.	Item description	Manufacturer part number	Estimated value (units)
25.	Ceramic Liner 6 1/2"	7466650	6
26.	Ceramic Liner 6"	7466600	6
27.	Ceramic Liner 5 1/2"	7466550	6
28.	Ceramic Liner 5"	7466500	3

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Bentec T1600 7500 psi

LP.	Item description	Manufacturer part number	Estimated value (units)
29.	Ceramic Liner 6 1/2"	7466650	12
30.	Ceramic Liner 6"	7466600	12
31.	Ceramic Liner 5 1/2"	7466550	12
32.	Ceramic Liner 5"	7466500	6

Oillwell A-850

LP.	Item description	Manufacturer part number	Estimated value (units)
33.	Ceramic Liner 6 1/2"	7330651	18
34.	Ceramic Liner 6"	7330601	18
35.	Ceramic Liner 5 1/2"	7330551	12
36.	Ceramic Liner 5"	7330501	9

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2. Mud Pump Spare Parts – Technical Specification

- a) Please take notice! All part numbers according to NOV. The Buyer accept different replacements for each Mud Pump with indications below!
- b) Certification requirements: API

NOTE: values of Spare parts indicated below are only estimates based on previous years usage, non-binding and can be changed. The Buyer reserves the right to not purchase whole volume after signing the Agreement.

Gardner Denver PZ 7

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
1.	Liner gasket	7916692	36
2.	Valve cover gasket	2011862	36
3.	seat	7DD-B1	24
4.	Spring	5710-110	24
5.	Valve	U5CE-EEF	24

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Gardner Denver PZ 8 / PZ 9

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
6.	Liner gasket	7916692	36
7.	Valve cover gasket	2011862	36
8.	Spring	5710-110	24
9.	seat	7DD-B1	24
10.	Valve	U5CE-EEF	24

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Mud Pump National 9P100/10P130

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
11.	Liner gasket 6 1/2"	7923283	36
12.	Liner gasket 6"	7923261	36
13.	Liner gasket 5 1/2"	7923263	36
14.	Liner gasket 5"	7923265	24
15.	Valve cover gasket	1540126	48
16.	Spring	1560701	36
17.	seat	1561450	48
18.	Valve	1560995	48

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Mud Pump F-800 / F-1000

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
19.	Liner gasket	7918282	48
20.	Valve cover gasket	7918282	36
21.	Spring	5710-111	36
22.	Seat	6ADD-B6	36
23.	Valve	U5B-EH	36

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Mud Pump Bomco F-1600 - according to the catalog number, unless the producer was indicated

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech except for Seat and Valve (**only Novatech**)

LP.	Item description	Manufacturer part number	Estimated value (units)
24.	Liner gasket	7916800	48
25.	Valve cover gasket	7916801	48
26.	Valve cover gasket	7916741	48
27.	Spring	5710-115L	48
28.	seat	(ND7-S1 Novatech)	48
29.	Valve	(ND7-V2HC Novatech)	48

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Mud Pump IDECO T1300

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech except for Valve cover gasket (**Southwest**), seat and Valve (**Novatech**)

LP.	Item description	Manufacturer part number	Estimated value (units)
30.	Liner gasket	7916082	48
31.	Valve cover gasket	(AJ0507U Southwest)	48
32.	Valve cover gasket	7916082	48
33.	Spring	5710-115L	36
34.	seat	61101507	36
35.	Valve	60155041	36
36.	seat	(ND7-S1 Novatech)	48
37.	Valve	(ND7-V2HC Novatech)	48

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Mud Pump Bentec T1600 7500 psi

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
38.	Liner gasket 6 1/2"	7923284	12
39.	Liner gasket 6"	7923261	12
40.	Liner gasket 5 1/2"	7923263	12
41.	Liner gasket 5"	7923264	6
42.	Valve cover gasket	1540126	36
43.	Spring	5710-115L	24
44.	seat	1561450	36
45.	Valve	1560995	36

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Mud Pump Bentec T1600 7500 psi

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech except for Valve cover gasket (**Southwest**), seat and Valve (**Novatech**)

LP.	Item description	Manufacturer part number	Estimated value (units)
46.	Liner gasket 6 1/2"	7923284	36
47.	Liner gasket 6"	7923261	36
48.	Liner gasket 5 1/2"	7923263	36
49.	Liner gasket 5"	7923264	24
50.	Valve cover gasket	(G-787-Z Southwest;	48
51.	Spring	5710-115L	36
52.	seat	(ND7-S12 Novatech)	48
53.	Valve	(ND7-V2HC Novatech)	48

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Mud Pump Oillwell A-850

Part numbers according to NOV

Acceptable producers: NOV, Southwest, Acumen, Novatech

LP.	Item description	Manufacturer part number	Estimated value (units)
54.	Liner gasket 6 1/2"	20100016	24
55.	Liner gasket 6"	6307701	24
56.	Liner gasket 5 1/2"	20100009	24
57.	Liner gasket 5"	20100008	24
58.	Valve cover gasket	72111021	48
59.	Spring	5710-110	36
60.	seat	7DD-B1	36
61.	Valve	U5CE-EEF	36

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Mud Pump Piston ACUMEN Patriot

Part numbers according to Acumen

Acceptable producers: Acumen

LP.	Item description	Manufacturer part number	Estimated value (units)
62.	Piston 5"	Patriot type - UB- 50-3	48
63.	Piston 5-1/2"	Patriot type - UB-54-3	48
64.	Piston 6"	Patriot type - UB- 60-3	48
65.	Piston 6-1/2"	Patriot type - UB- 64-3	48

3. Documents requirements

- enclose technical description of offered Liners and/or Spare Parts that will cover with Exalo Drilling S.A. requirements,
- enclose manufacturer's quality documentation package,
- enclose your API licenses related to Liners and/or Spare Parts manufacturing,
- enclose example of inspection and material certificates for similar supply,

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4. Terms of warranty

Please enclose detailed description regarding to warranty terms for offered Consumables including:

- a) scope and period of warranty for the products offered and warranty for their defects (minimum 24 months)
- b) time for reporting a defect from the moment it was discovered
- c) method of reporting defect,
- d) the date of consideration of the complaint and the deadline for removing the defect, defect removal method (replacement of the product with a new one, refund, etc.)